

Notice of Allowability

Application No.

09/531,285

Examiner

John B. Vigushin

Applicant(s)

CHEN ET AL.

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment filed 27 October 2003 (Cert. of Mailing date: 23 October 2003).
 2. ☒ The allowed claim(s) is/are 37-39, 41 and 42
 3. ☐ The drawings filed on _____ are accepted by the Examiner.
 4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: _____
5. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
 - (a) ☐ The translation of the foreign language provisional application has been received.
 6. ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

7. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
8. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☒ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☒ to Paper No. 5
 - (b) ☒ including changes required by the proposed drawing correction filed 02 July 2001, which has been approved by the Examiner.
 - (c) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the margin according to 37 CFR 1.121(d).

9. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1 <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5 <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2 <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6 <input type="checkbox"/> Interview Summary (PTO-413), Paper No. _____ |
| 3 <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No. _____ | 7 <input type="checkbox"/> Examiner's Amendment/Comment |
| 4 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8 <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9 <input type="checkbox"/> Other |

John B. Vigushin
Primary Examiner
Art Unit: 2827

DETAILED ACTION

1. The present Office Action is responsive to Applicant's Amendment filed October 27, 2003 (Certificate of Mailing date: October 23, 2003). The Examiner acknowledges the amendments to Claims 38, 39 and 41, and the cancellation of Claims 40 and 43. Claims 37-39, 41 and 42 remain pending in the instant amended Application.

Allowable Subject Matter

2. Claims 37-39, 41 and 42 have been allowed.
3. The following is an examiner's statement of reasons for allowance:

As to Claim 37, patentability resides in **the combination of the second insulating layer including an adhesive and removing at least a portion of the second insulating layer proximate the apex of the conducting member**, in further combination with the other limitations of the claim.

As to Claims 38, 39, 41 and 42, patentability resides in **the combination of the solder bump protruding to an apex at a first level beyond the first surface plane and the second insulating layer including an adhesive**, in further combination with the other limitations of base Claim 38.

4. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

5. Claims 38, 39, 41, 42 and 37 of the instant allowed Application have been renumbered as Claims 1-5, respectively, for publication in the issued patent.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ishida (US 5,590,461) discloses, in Fig. 6E, all the limitations of Applicant's Claim 38, including: the first insulating layer 1 having a first surface, a conductor 41B along a portion of the surface of insulating layer 1, a solder bump 47B in communication with conductor 41B and protruding to an apex at a first level beyond the first surface of insulating layer 1 (col.8: 43-46 and col.9: 47-49); a second layer 42B extending laterally from the solder bump 47B and along at least a portion of the major surface defined by the surfaces of insulating layer 1, conductor 41B and solder bump 47B; the second layer 42B extending from the first surface to a second level not extending beyond the first level. **Ishida does NOT teach that the second insulating layer includes an adhesive;** rather Ishida teaches a separate adhesive layer 14 deposited over second layer 42B (col.8: 18-20).

As indicated section 4, pp.2-3 of the previous Office Action of July 25, 2003 (Paper No. 0703), Abolafia et al. (US 3,795,047) discloses all the limitations of base Claim 38, including the second insulating layer 17 including an adhesive, i.e., an epoxy (col.4: 22-23 and 32-44) **but does NOT teach that spherical particles 18 are solder bumps,** as now required in Applicant's instant amended Claim 38; rather, they are

metal powder particles (col.4: 25-28). See Applicant's remarks on p.5 of Applicant's above-cited instant Amendment).

The above-cited reason for allowing amended Claim 38 (see section 3, above) is derived from the Examiner's finding that there is no teaching or suggestion in either or both of Ishida and Abolafia et al. to motivate the modification of the teachings of the one with the teachings of the other to render base Claim 38 obvious.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John B. Vigushin whose telephone number is 703-308-1205 (Crystal City campus) or 571-272-1936 (Carlyle campus). The examiner can normally be reached on 8:30AM-5:00PM Mo-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached at 571-272-1957. The fax phone number for the organization where this application or proceeding is assigned is 703-308-7382.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



John B. Vigushin
Primary Examiner
Art Unit 2827